

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference FJT0052293	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP01/00191	International filing date (day/month/year) 15 January 2001 (15.01.01)	Priority date (day/month/year)
International Patent Classification (IPC) or national classification and IPC G11B 5/31		
Applicant FUJITSU LIMITED		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of _____ sheets.</p>
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input checked="" type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>

Date of submission of the demand 26 April 2001 (26.04.01)	Date of completion of this report 20 November 2001 (20.11.2001)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

I. Basis of the report**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed
- ☐ the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	3,8-13	YES
	Claims	1,2,4-7	NO
Inventive step (IS)	Claims	3,9-13	YES
	Claims	1,2,4-8	NO
Industrial applicability (IA)	Claims	1-13	YES
	Claims		NO

2. Citations and explanations

Document 1: JP, 11-213329, A (cited in the ISR)

Document 2: JP, 11-339223, A (cited in the ISR)

Document 3: JP, 11-353614, A (cited in the ISR)

The subject matter of claim 1 does not appear to be novel, since it is described in documents 1-3 cited in the ISR.

The subject matter of claim 2 does not appear to be novel, since it is described in documents 1 and 3.

The subject matters of claims 4 and 5 do not appear to be novel, since documents 1 and 2 describe to the effect that a lower magnetic pole layer is formed by means of, for example, the sputtering method, and since nitride materials and composite materials consisting of a magnetic material and an oxide are well known as the materials of the lower magnetic pole layer.

The subject matters of claims 6 and 7 do not appear to be novel, since they are described in documents 1 and 2.

The subject matter of claim 8 does not appear to involve an inventive step in view of document 1, since a person skilled in the art could have merely, as required, taken the step of laminating a flattened protective film on the surface of the lower magnetic pole layer.

For claims 3 and 9-11, documents 1-3 neither describe nor suggest the constitution, in which a non-magnetic metallic material is employed as the non-magnetic material used for packing a groove, or the constitution, in which because of the aforesaid constitution, when a high frequency signal is written, the eddy current generated in a magnetic core can be allowed to go to the non-magnetic material, for allowing the write magnetic field to be enlarged.

For claims 12 and 13, documents 1-3 neither describe nor suggest the constitution, in which a demarcated non-magnetic region can be formed in the lower magnetic pole based on the non-magnetic element driven into the lower magnetic pole layer, or the constitution, in which in reference to it, a gap depth is specified.

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

<u>Application No. Patent No.</u>	<u>Publication date (day/month/year)</u>	<u>Filing date (day/month/year)</u>	<u>Priority date (valid claim) (day/month/year)</u>
JP 2001-23116 A [E,X]	26 January 2001 (26.01.2001)	02 July 1999 (02.07.1999)	

2. Non-written disclosures (Rule 70.9)

<u>Kind of non-written disclosure</u>	<u>Date of non-written disclosure (day/month/year)</u>	<u>Date of written disclosure referring to non-written disclosure (day/month/year)</u>

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP01/00191

A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl.⁷ G11B 5/31

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.⁷ G11B 5/31

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Toroku Jitsuyo Shinan Koho	1994-2001
Kokai Jitsuyo Shinan Koho	1971-2001	Jitsuyo Shinan Toroku Koho	1996-2001

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E, X	JP, 2001-23116, A (Hitachi Metals, Ltd.), 26 January, 2001 (26.01.01), Par. Nos. [0025] to [0029]; Fig. 1 (Family: none)	1, 6, 7
X Y	JP, 11-213329, A (Hitachi, Ltd.), 06 August, 1999 (06.08.99), Full text; all drawings (Family: none)	1, 2, 4-7 3, 8-13
X	JP, 11-339223, A (TDK Corporation), 10 December, 1999 (10.12.99), Par. Nos. [0062] to [0067]; Figs. 9 to 13 (Family: none)	1, 4-7
X	JP, 11-353614, A (NEC Corporation), 24 December, 1999 (24.12.99), Par. Nos. [0016] to [0019]; Fig. 1 (Family: none)	1, 2
Y	JP, 7-129930, A (Fujitsu Limited), 19 May, 1995 (19.05.95), Full text; all drawings (Family: none)	3, 8-11
Y	JP, 4-353609, A (TDK Corporation), 08 December, 1992 (08.12.92),	12, 13

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
01 March, 2001 (01.03.01)Date of mailing of the international search report
13 March, 2001 (13.03.01)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	Par. Nos. [0014], [0029]; Figs. 12 to 14 (Family: none)	